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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/803,035      03/18/2004      Hidetoshi Honbo      503.34465CV6      5592

20457      7590      01/25/2008  
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SUITE 1800  
ARLINGTON, VA 22209-3873

EXAMINER
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MAPLES, JOHN S

ART UNIT	PAPER NUMBER
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1795

MAIL DATE	DELIVERY MODE
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01/25/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/803,035	Applicant(s) HONBO ET AL.	
	Examiner John S. Maples	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-7 ~~is/are~~ are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-7 ~~is/are~~ are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                           | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

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1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 3-7 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the fraction of rhombohedral crystal structure being 18.2 % by weight or less, does not reasonably provide enablement for equal to or less than 10% by weight or less. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. (New Rejection)

In the present specification, on page 22, Table 1, the amount of rhombohedral crystal structure that shows improved lithium intercalation and deintercalation capacity is 18.2 % or less. Therefore, the claims require amendment to include this value.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3-7, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Takami et al.-US 5,340,670. (Takami) (New Rejection with regard to claim 7)

Reference is made to column 2, line 65 through column 4, line 30; column 10, lines 15-24; column 18, lines 47-51; column 20, lines 45-67; column 22, lines 13-28 of

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Takami for a lithium non-aqueous battery having a negative electrode comprising hexagonal structure, a completely crystalline structure, as set forth in columns 18, 20 and 22. The above portion in column 10 sets forth the claimed particle size. It is noted that with the language in claim 1 of less than 10% for the amount of the graphite powder of a rhombohedral structure, a reference citing no rhombohedral structure would meet this limitation. Takami sets forth no specific amount of graphite powder of a rhombohedral structure. With regard to claim 3, this claim recites product-by-process limitations and as such is met by the teachings to Takami as outlined above. Columns 16 and 17 of Takami set forth the ethylene carbonate along with, for example, diethyl-carbonate, and a lithium salt, thus meeting the limitations of claim 6. With regard to new claim 7, as is well known in the art, there is at least 3% amount by weight of rhombohedral crystal structure present in hexagonal graphite crystal structure.

Applicant's arguments have all been considered but are not deemed persuasive. Applicant argues that Takami does not disclose a limiting fraction of rhombohedral structure. As stated above, Takami does not specifically disclose that the crystal structure of the negative electrode therein includes any rhombohedral crystalline structure and so this reference anticipates the claimed subject matter.

Applicant argues that Takami does even mention the negative electrode including any rhombohedral crystal structure. This argument is not persuasive because applicant has used the language "a fraction of rhombohedral structure...equal to or less than 10% by weight". Because Takami does not specifically mention any amount of

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rhombohedral structure, the claim is anticipated because a zero amount of rhombohedral structure as taught by Takami meets the claimed recitation.

Applicant repeatedly states and sets forth in the claims that graphite powder including less than 10% by weight of rhombohedral crystal structure, improved lithium intercalation and deintercalation capacity is achieved. This is incorrect. It is noted from the table on page 22 of the present specification, that at values of 18.2 percent or less by weight of rhombohedral crystal structure, there is improved lithium intercalation and deintercalation.

Applicant further states that the negative electrode needs to be limited to at most 10% by weight rhombohedral crystal structure. Again, the table on page 22 of the present specification does not support this statement.

Applicant further argues that a 103 rejection would not be proper in view of Takami. The examiner has not applied Takami as a reference under 35 USC 103 at this time and so this argument is deemed moot.

A further argument by applicant is that because Takami includes crystallite structure then the same would not include the amount of claimed rhombohedral structure. This argument is believed to have been adequately traversed by the discussion above regarding Takami teaching no amount of rhombohedral structure and thus meeting the claimed subject matter.

Applicant further states that it is unclear in the teachings of Takami whether or not the hexagonal-net-plane layers are of hexagonal crystal structure or of rhombohedral crystal structure. First of all, because of the many portions of Takami that

set forth X-ray diffraction peaks, these portions are crystal structure for the graphite material. Secondly, because Takami recites hexagonal layers, then the structure thereof would be hexagonal. No mention is made of rhombohedral structure because none is present, or only the inherently amount of 3% is present.

A further argument is that because Takami does not mention any amount of rhombohedral crystal structure then the reference cannot anticipate the claimed subject matter. This is not convincing because applicant has claimed in claims 1 and 3-6 an amount of less than 10%. With Takami not setting forth any amount of rhombohedral structure, this would thus meet the presently claimed subject matter.

Applicant refers to Table 1 on page 22 of the present application which applicant interprets that at less than 10% by weight of rhombohedral crystal structure, improved lithium intercalation and deintercalation capacity is achieved. This is incorrect. It is noted from this table, that at values of 18.2 percent or less by weight of rhombohedral crystal structure, there is improved lithium intercalation and deintercalation.

Finally, applicant argues that Takami does not recognize the importance of limiting the amount of rhombohedral structure in the negative electrode. Again, because there is no specific teaching in Takami of any amount of rhombohedral crystal structure and hence Takami teaches zero amount of the same, this reference meets the claimed subject matter as presently presented. In any event, at the very most, the negative electrode of Takami would include no more than 3% rhombohedral structure, an amount present in all hexagonal crystal structure, which amount falls within the claimed range by applicant in new claim 7.

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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6. Claims 1, 3-7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of copending Application No. 11/125,193. Although the conflicting claims are not identical, they are not patentably distinct from each other because the 11/125,193 recites the deintercalating capacity of the graphite unlike the present application, however it would have been obvious to have utilized graphite having the above mentioned deintercalating capacity of 11/125,193 in the present application because the same would produce the output required for particular specific loads.

These are provisional obviousness-type double patenting rejections because the conflicting claims have not in fact been patented.

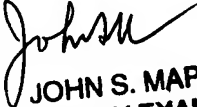
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John S. Maples whose telephone number is 571-272-1287. The examiner can normally be reached on Monday-Friday, 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSM/1-22-2008

  
JOHN S. MAPLES  
PRIMARY EXAMINER